ARGOTEC PRODUCTS
DATA SHEET

ZEUS PCDU

Modular Power Conversion & Distribution Unit

ZEUS (Zenith Energy Utilization System) is designed to power a wide range of microsatellite platforms.

It provides an all-in-one solution including management of Solar Panel Arrays (SPAs), regulated charge for Li-Ion batteries, and fault-tolerant power regulation and distribution, with full-digital control over its functionalities.



CUSTOMIZABLE MODULAR DESIGN

ZEUS features a modular design that includes a digital control board, a voltage regulation board dedicated to SPAs, and a second voltage regulation board for output power rails.

Each module can be customized to meet mission-specific requirements, and the overall modular architecture minimizes manufacturing time and streamlines AIT activities.

EQUIPPED WITH A RADIATION-TOLERANT MICROCONTROLLER

ZEUS leverages a powerful ARM radiation-tolerant microcontroller to handle system functionalities digitally.

While guaranteeing proper behavior with respect to radiation effects, the fully digital implementation allows for granular control and extensive tuning options, both in flight and during ground processing.

ALL-IN-ONE POWER MANAGEMENT SOLUTION

ZEUS is designed to fully address the power needs of state-of-the-art small satellites.

It is capable not only of handling SPAs, managing Li-Ion batteries, and providing fault-tolerant output power rails, but it also implements a wide set of features aimed at streamlining satellite-level AIT, guaranteeing safety and mission assurance, and simplifying overall power.

VERSION 2 - 2025



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TECHNICAL SPECIFICATION

PROCESSING UNIT(S)	ARM radiation-tolerant microcontroller
SOLAR PANEL INPUTS RATINGS	8 Rails 8.5 V – 26.5 V, 0.88 A - for each channel
BATTERY RATINGS	2 Rails for 8sXp pack 25.6 V – 32.8 V, 5 A - for each rail
CHANNELS	8× Vbat, 2 A or 4 A (customizable at production time) Up to 8× 12 V or 5 V, 2 A or 4 A (customizable at production time) Overcurrent Protection with software programmable thresholds
TID RATING	30 krad
DIGITAL I/F	2× CAN I/F 1× UART I/F
MASS	560 g
VOLUME	96.5 × 111 × 50 mm 0.6 U
CONNECTORS TYPE	High-reliability Harwin G125 connectors
QUALIFICATION	TRL 8
CAPABILITIES	Power conversion and distribution to a variety of subsystems and payloads Fault Detection Isolation and Recovery functionalities

argotec
SPACE FOR AMBITIONS